REMARKS

Claims 1, 24-26, 39, 59-61, 78, 101-103, 114, 133-135 and 148-158 were pending and presented for examination in this application. Claims 1, 24-26, 39, 59-61, 78, 101-103, 114, 133-135 and 148-158 were rejected in the Office Action dated March 4, 2008.

Claims 1, 39, 59, 78, 101, 102, 114, 133 and 134 are hereby amended. Claims 148 and 149 are hereby canceled without prejudice or disclaimer. Claims 159-162 are hereby added.

In view of the Amendments herein and the Remarks that follow, Applicants respectfully request that Examiner reconsider all outstanding rejections, and withdraw them.

Supplemental Information Disclosure Statement

Applicants submitted a Supplemental Information Disclosure Statement on April 16, 2008. The Examiner is respectfully requested to consider references included in this Supplemental Information Disclosure Statement, and indicate consideration of the references in the next communication to Applicants.

Response to Rejection of Claims under 35 USC § 112

On page 2 of the Office Action, claims 148 and 149 were rejected under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully disagree that claims 148 and 149 are not enabled in the specification and the drawings. Claims 148 and 149 are, however, canceled herein to expedite the prosecution of this patent application. Therefore, this rejection is overcome.

On pages 2 and 3 of the Office Action, claims 1, 39 and 133 were rejected under 35 USC § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter. Specifically, claims 1 and 39 were rejected for reciting the limitation "said compression parameters in said first bandwidth adjust module" which lacks antecedent basis. Claim 39 was also rejected for reciting "configurable as a master node, a slave master node and a network node," which causes confusion as to whether the node is a master node, slave node and network node simultaneously. Claim 133 was rejected for reciting the limitation "master node" that lacks antecedent base.

Claims 1 and 39 are amended herein to remove the phrase "said compression parameters in said first bandwidth adjust module." Claim 39 is further amended to remove the phrase "configurable as a master node, a slave master node and a network node." Claim 133 is amended herein to no longer recite "a master node." Instead, claim 133, as amended, now recites "the second network node."

This rejection is overcome in view of the amendments to claims 1, 39 and 133. Therefore, the Examiner is respectfully requested to withdraw this rejection.

Response to Rejection of Claims under 35 USC § 102(e)

On page 3 of the Office Action, claims 1, 24-26, 78, 101-103, 114 and 133-135 were rejected under 35 USC § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0140159 ("Campbell"). This rejection is respectfully traversed in view of the amendments.

Independent claim 1, as amended, specifically recites:

> one or more network nodes comprising a data interface, a compression module, a first local network interface, and a first

bandwidth adjustment module, wherein the data interface is adapted to receive data streams from two or more sources, said compression module adapted to control a plurality of compression parameters associated with compressing the received data streams for transmission over a local network having changing network conditions, the first local network interface adapted to establish communication over the local network, ***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network***; and

a master node comprising a second local network interface adapted to establish communication with the one or more network nodes over the local network, and a second bandwidth adjustment module adapted to determine the plurality of compression parameters for the compression module. (Emphasis added).

Claim 1 recites one or more network nodes with a data interface, a compression module, a first local network interface, and a first bandwidth adjustment module. The system also includes a master node with a second local network interface and a second bandwidth adjustment module. The network nodes and the master node communicate using the first and second local network interfaces over a local network having changing network conditions. The one or more network nodes receive data streams from two or more sources via the data interface. The first bandwidth adjustment module allocates bandwidth of the local network in proportion to ***a network load compensation factor*** representing changes in available bandwidth within the local network. ***If the network conditions change over a wide range, a large network load compensation factor is assigned. In contrast, if the network conditions change over a narrow range, a small network load compensation factor is assigned***. The second bandwidth adjustment module dynamically changes at least one of said compression

parameters in said first bandwidth adjustment module based on changing network conditions on the network, wherein the changing network conditions affect network bandwidth.

The feature of "***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network"*** recited in claim 1, as amended, is advantageous because the data streams may be transmitted from the network nodes to the master node in a stable and reliable manner regardless of changes in the available bandwidth of the local network.

Support for the feature of "***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network***" recited in claim 1, as amended, may be found, for example, in lines 18-23 of page 26 of the specification and in Figure 7.

Campbell fails to disclose the feature of "***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network"*** recited in claim 1, as amended. Campbell discloses a protocol for handling video and audio over the web to make efficient use of the available network bandwidth and CPU capacity for video processing. See Campbell, paragraph [0099]. A server in Campbell learns the status of the connection to a client based on a feedback from the client. See Campbell, paragraph [0099]. If the loss rate of the frames at the client is too severe, the client sends the information to the server. The server then adjusts its transmission speed accordingly. See Campbell, paragraph [0015]. That is, in Campbell, the transmission

speed of each data stream is controlled dynamically based on the loss rate of frames at the client. Nowhere in Campbell does it disclose providing more headroom for a data stream depending on the fluctuation of available bandwidth. Therefore, Campbell does not disclose the feature of "***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network***" recited in claim 1, as amended.

Therefore, claim 1, as amended, is patentably distinguishable from Campbell. Accordingly, the Examiner is requested to withdraw rejection of claim 1 based on Campbell.

Claims 24-26 depend from claim 1, and therefore, essentially the same arguments set forth above for claim 1 are equally applicable to claim 1. Accordingly, claims 24-26 are also patentably distinguishable from Campbell.

Independent claim 78, as amended, also recites the feature of "***determining a network load compensation factor representing changes in available bandwidth of the local network based on the sampled network conditions; allocating bandwidth for transmission of the data streams over the local network in proportion to the network load compensation factor . . . .***" Therefore, essentially the same arguments set forth above for claim 1 are equally applicable to claim 78 and its dependent claims 101 to 103.

Independent claim 114, as amended, specifically recites:

> receiving two or more data streams from sources via multiple connections to sources at a first network node;
> determining available bandwidth of a local network between the first network node and a second network node by sampling network conditions of the local network;
> ***allocating predetermined bandwidth of the local network to a first data stream received via a first connection of the***

multiple connections, the first connection having a capacity above a predetermined threshold;

allocating bandwidth remaining after allocating the predetermined bandwidth to one or more second data streams received via second connections of the multiple connections, each of the second connections having capacity not above the predetermined threshold; and

sending the first data stream to the second network node via the local network using the allocated bandwidth; and

sending the second data streams to the second network node via the local network using the remaining bandwidth.

(Emphasis added).

In claim 114, two or more data streams are received at a first network node via multiple connections between sources of the data streams and the first network node. The available bandwidth between the first network node and a second network node is determined by sampling the network conditions. For a first data stream received via a first connection having a capacity over a predetermined threshold, predetermined bandwidth of the local network is assigned. For other data streams received over second connections (each having capacity not above the predetermined threshold), the remaining bandwidth is allocated. The first stream is sent to the second network node using the allocated bandwidth. The second data streams are sent to the second network node using the remaining bandwidth.

The feature of "***allocating predetermined bandwidth . . . to a first data stream received via a first connection . . . having a capacity above a predetermined threshold; allocating bandwidth remaining after allocating the predetermined bandwidth to one or more second data streams received via second connections . . . having capacity not above the predetermined threshold***" recited in claim 114, as amended, is advantageous because transmission of the first data stream to the second network node in an acceptable quality is

ensured while transmitting the second data streams to the second network node when there is sufficient bandwidth remaining between the first network node and the second network node.

Support for the feature of "***allocating predetermined bandwidth . . . to a first data stream received via a first connection . . . having a capacity above a predetermined threshold; allocating bandwidth remaining after allocating the predetermined bandwidth to one or more second data streams received via second connections . . . having capacity not above the predetermined threshold***" as recited in claim 114, as amended, may be found, for example, in lines 10-15 of the specification and in Figure 8.

Campbell fails to disclose this feature. As set forth above, Campbell at best discloses using the same protocol for transmitting video and audio over the web. See Campbell, paragraph [0099]. Campbell does not disclose that the server distinguishes the data streams received from sources via connections with different capacity. Therefore, Campbell does not disclose the feature of "***allocating predetermined bandwidth . . . to a first data stream received via a first connection . . . having a capacity above a predetermined threshold; allocating bandwidth remaining after allocating the predetermined bandwidth to one or more second data streams received via second connections . . . having capacity not above the predetermined threshold***" as recited in claim 114, as amended.

Therefore, claim 114, as amended, is patentably distinguishable from Campbell. Accordingly, the Examiner is respectfully requested to withdraw rejection of claim 114.

Claims 133-135 depend from claim 114, and therefore, the same arguments set forth above for claim 114 are equally applicable to claims 133-135. Therefore, claims 133-135 are also patentably distinguishable from Campbell.

Response to Rejection of Claims under 35 USC § 103

On page 9 of the Office Action, claims 39, 59-61 and 148-152 were rejected under 35 USC § 103(a) as being unpatentable over Campbell in view of U.S. Patent No. 6,122,673 to Basak et al. ("Basak"). This rejection is respectfully traversed in view of amendments.

Independent claim 39, as amended, specifically recites:

> a first network node comprising a data interface, a first bandwidth adjustment module, a first local network interface, and a compression module, wherein the data interface is adapted to receive data streams via multiple connections to sources, said compression module adapted to control a plurality of compression parameters associated with compressing of the received data streams for transmission over a local network having changing network conditions, the first local network interface adapted to establish communication over the local network, ***said first bandwidth adjustment module adapted to allocate predetermined bandwidth of the local network to a data stream received via a first connection of the multiple connections wherein the first connection has capacity above a predetermined threshold, the first adjustment module further adapted to allocate bandwidth remaining after allocating the predetermined bandwidth to one or more data streams received via second connections of the multiple connections of the multiple connections wherein each of the second connections has capacity not above the predetermined threshold***; and
>
> a second network node comprising a second bandwidth adjustment module adapted to determine the plurality of compression parameters for the compression module, and a second local network interface adapted to establish communication with the one or more network nodes over the local network. (Emphasis added).

As set forth above for claim 114, Campbell fails to disclose the feature of "***said first bandwidth adjustment module adapted to allocate predetermined bandwidth of the local network to a data stream received via a first connection . . . has capacity above a predetermined threshold, the first adjustment module further adapted to allocate***

bandwidth remaining after allocating the predetermined bandwidth to one or more data streams received via second . . . has capacity not above the predetermined threshold" as recited in claim 39, as amended. Neither does Basak disclose this feature. Basak discloses a scheduler for controlling when entities are operated upon by a server. See Basak, col. 4, ll. 50-51. Basak specifically discloses a scheduler which chooses entities to be operated upon by the server as a function of finishing times. Nowhere in Basak does it disclose anything about allocating bandwidths for a data stream depending on the capacity of the connection via which the data stream is received. Therefore, claims 39, as amended, is patentably distinguishable from Campbell and Basak.

Claims 59-61 and 150-152 depend from claim 39. Therefore, the arguments set forth above for claim 39 are applicable and applied for claims 59-61 and 150-152. Therefore, claims 59-61 and 150-152 are also patentably distinguishable from Campbell and Basak.

Claims 148 and 149 are cancelled herein. Therefore, the rejection of claims 148 and 149 is now moot.

In summary, claims 39, 59-61 and 150-152 are patentably distinguishable from Campbell and Basak. Therefore, the Examiner is respectfully requested to withdraw this rejection.

On page 13, claims 153-158 were rejected under 35 USC § 103(a) as being unpatentable over Campbell in view of Abad. J. et al. "Extending the power line LAN up to the neighborhood transformer," Communications Magazine, IEEE, vol. 41, no. 4, pp. 64-70 (April, 2003) ("ExtLan"). This rejection is respectfully traversed in view of the amendments.

Claim 1, as amended, recites the feature of "***said first bandwidth adjustment module adapted to allocate bandwidth of the local network to each of the received data streams proportional to a network load compensation factor representing changes in available bandwidth within the local network.***" As set forth above, Campbell fails to disclose such feature. Neither does ExtLan disclose this feature. ExtLan was cited in the Office Action merely for disclosing a power line network. Nowhere in ExtLan does it disclose anything about a network load compensation factor. Therefore, claim 1 is patentably distinguishable from Campbell and ExtLan.

Claims 153 and 156 depend from claim 1. Therefore, the arguments set forth for claim 1 with respect to Campbell and ExtLan are applicable and applied to claims 153 and 156. Accordingly, claims 153 and 156 are patentably distinguishable from Campbell and ExtLan.

Independent claim 78, as amended, recites the feature of "***determining a network load compensation factor representing changes in available bandwidth of the local network based on the sampled network conditions; allocating bandwidth for transmission of the data streams over the local network in proportion to the network load compensation factor . . . .***" Therefore, the arguments set forth above for claim 1 with respect to Campbell and ExtLan are applicable and applied to claims 154 and 157 depending from claim 78. Therefore, claims 154 and 157 are patentably distinguishable from Campbell and ExtLan.

Claim 114, as amended, recites the feature of "***allocating predetermined bandwidth . . . to a first data stream received via a first connection . . . having a capacity above a predetermined threshold; allocating bandwidth remaining after allocating the predetermined bandwidth to one or more second data streams received via second***

connections . . . having capacity not above the predetermined threshold . . . ." As set forth above, Campbell fails to disclose this feature. Neither does ExtLan disclose this feature. ExtLan at best discloses general protocol for transmitting over the power line network. Nowhere in ExtLan does it disclose allocating the predetermined bandwidth to a first data stream and remaining bandwidth to second data streams. Therefore, claim 114 is patentably distinguishable from Campbell and ExtLan.

Claims 155 and 158 depend from claim 114; and thus, the arguments set forth for claims 114 with respect to Campbell and ExtLan are applicable and applied to claims 155 and 158. Therefore, claims 155 and 158 are patentably distinguishable from Campbell and ExtLan.

In summary, claims 153-158 are patentably distinguishable from Campbell and ExtLan. Therefore, the Examiner is respectfully requested to withdraw this rejection.

Claims 160 and 162 are added herein and were not rejected in the Office Action. Claims 160 and 162, however, recite the feature of "***the second network node is configurable as a master node or a network node. . . .***" which is similar to the limitation recited in claim 39 before this amendment. Claim 39 was rejected in the Office Action based on Campbell and Basak. Therefore, claims 160 and 162 are addressed herein with respect to Campbell and Basak to expedite the prosecution of this application.

It is stated in the Office Action that Basak teaches a second network node configurable as a master node or a network node. Applicants respectfully disagree. Basak fails to disclose any network node configurable as a master node or a network node. As set forth above, Basak specifically discloses a scheduler that chooses entities to be operated upon

by the server as a function of finishing times. Basak, however, does not disclose controlling bandwidth for all sources on the local network or only sources connected to a node depending on whether the node is configured as a network node or a master node. At best, Basak discloses establishing hierarchical architecture in a scheduler for prioritizing requests received via different connections. See Basak, col. 13, ll. 31-47. Some connections are rate guaranteed whereas some are not. Basak is directed to scheduling requests received from different connections. Nowhere in Basak does it disclose anything about configuring a node as a ***master node*** that controls bandwidth for all sources on the local network or a ***network node*** that controls sources connected to that node.

Therefore, claims 160 and 162 are patentable for the additional reason that these claims recite the feature of "***the second network node is configurable as a master node or a network node . . . .***"

CONCLUSION

Applicants are submitting herewith claims 1, 24-26, 39, 59-61, 78, 101-103, 114, 133-135, and 150-162 to provide the scope and breadth of claims coverage to which Applicants believe is entitled in view of the cited art.

Applicants believe that the application is in condition for allowance of all claims herein, claims 1, 24-26, 39, 59-61, 78, 101-103, 114, 133-135, and 150-162, as amended, and therefore an early Notice of Allowance is respectfully requested. If the Examiner believes that for any reason direct contact with Applicants' attorney would help advance the prosecution of this case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully Submitted,
W. PAUL WILLES, ET AL.

Date: June 4, 2008 By: /Dohyun Ahn/

Dohyun Ahn, Ltd. Rec. No. L0359
FENWICK & WEST LLP
801 California Street
Mountain View, CA 94041
Phone: (650) 335-7291
Fax: (650) 938-5200
E-Mail: dahn@fenwick.com